

CONCLUSIONS

The results of this study indicate that the use of a single-pointed needle can cause significant damage to the skin barrier, as evidenced by the increase in TEWL and the decrease in SC thickness. The use of a double-pointed needle, however, did not cause significant changes in TEWL or SC thickness. These findings suggest that the use of a double-pointed needle may be a more suitable option for minimally invasive procedures, such as microneedling, where maintaining the integrity of the skin barrier is crucial.

AUTHOR CONTRIBUTIONS

All authors contributed equally and significantly to the study design, data collection, analysis, and manuscript preparation.

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- [Name]
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REFERENCES

- [Reference 1]
- [Reference 2]
- [Reference 3]
- [Reference 4]
- [Reference 5]
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- [Reference 7]
- [Reference 8]
- [Reference 9]
- [Reference 10]

APPENDIX A

Table A1: Summary of TEWL measurements (g H₂O/m²/h) for different groups and time points.

Group	Time Point	TEWL (g H ₂ O/m ² /h)
Control	Baseline	~0.5
	Post-procedure	~0.5
Single-pointed Needle	Baseline	~0.5
	Post-procedure	~1.5
Double-pointed Needle	Baseline	~0.5
	Post-procedure	~0.5

APPENDIX B

Figure B1: Line graph showing SC Thickness (mm) over Time (days) for Control, Single-pointed Needle, and Double-pointed Needle groups.

The graph shows that the control group maintains a stable SC thickness of approximately 0.1 mm over the 7-day period. The single-pointed needle group shows a sharp initial drop in SC thickness to about 0.05 mm at day 1, followed by a gradual recovery towards the baseline. The double-pointed needle group shows no significant change in SC thickness throughout the 7-day period.

APPENDIX C

Table C1: Summary of SC Thickness (mm) measurements for different groups and time points.


Group	Time Point	SC Thickness (mm)
Control	Baseline	~0.1
	Post-procedure	~0.1
Single-pointed Needle	Baseline	~0.1
	Post-procedure	~0.05
Double-pointed Needle	Baseline	~0.1
	Post-procedure	~0.1

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